

**Cambridge University Engineering Department
Royal Academy of Engineering**

Robot Sprint Project

From a standing position, each robot has to attempt a 2400mm sprint in the fastest possible time.

1 CONTEST DETAILS

- The contest will take place on a raised track, 2400mm long and 400mm wide.
- All entries must be considered ‘walkers’, i.e. limbed or legged machines (see **Rules** below).
- Machines will run individually and have three attempts at the course.
- Machines will be ranked according to the time taken to complete the course.
- Those not completing the course will be ranked according to distance covered before leaving the track.

2 RULES

- Robots must be propelled in a manner to simulate walking.
- If the “legs” revolve then a maximum of only 2 feet per end of a revolving shaft shall be allowed, each in contact with the ground for less than 30° of rotation. (Any more than this and the revolving component shall be considered to be a wheel.)
- Wheels may be used for stabilisation purposes only, up to a maximum number of two. They must not be driven.
- Additional materials will be made available upon request with the following exceptions:
 - **No extra wheels, motors or batteries**
(A fresh set of batteries will be issued for the competition.)

3 MATERIALS

Motor with worm and wheel gearbox	1 off	AA size 1.5V cells	3 off
Polythene cams	2 sets	Battery box & switch	1 off
Polythene gears	2 sets	Top-hat axle bushes	2 sprues
Polythene wheels	2 only	Corriflute joiners	1 set
Steel axle 3mm dia. × 300mm long	3 off	M4 screws 16mm long	4 off
Aluminium axle 3.2mm dia. × 300mm long	3 off	M4 screws 25mm long	4 off
Corriflute sheet 300mm square	1 off	M4 nuts	8 off
Aluminium sheet 20swg × 100mm × 150mm	1 off	M4 washers	8 off
Plywood sheet 3.5mm × 100mm × 150mm	1 off	Lolly sticks	4 off
Steel welding rods 3/32” dia. (if requested)		“Soft-Link” tubing	150mm
Expanded polystyrene sheet or block		Insulating tape	1 reel

4 TOOLS

<i>Individual Kits</i>		<i>Shared Resources</i>	
Safety glasses	Hammer	Hand Tools	Machine Tools
Pen & pencil	Square	Files	(under supervision)
Steel rule (300mm)	Scissors	Hacksaws	Pillar drills
Stanley knife	Scriber	Snips	Guillotine
Centre punch	M4 spanner	Hot glue guns	Bending machine
Cutting board	Screwdriver		Notch cutters
De-burring tool	Pliers		
Emery paper			